



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,754	04/03/2001	Young-ho Ahn	Q61477	9101

7590 03/03/2006
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W., Suite 800
Washington, DC 20037-3213

EXAMINER

PATHAK, SUDHANSHU C

ART UNIT PAPER NUMBER

2634

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

A

**Advisory Action
Before the Filing of an Appeal Brief**

Application No. 09/823,754	Applicant(s) AHN, YOUNG-HO	
Examiner Sudhanshu C. Pathak	Art Unit 2634	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED February 13th, 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☒ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: 3 and 4.
Claim(s) rejected: 1, 2 and 5-12.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:
See attached "Response to Arguments".
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____.
13. ☐ Other: _____.

EMMANUEL BAYARD
PRIMARY EXAMINER

Response to Arguments

1. Applicant's arguments filed on February 13th, 2006 have been fully considered but they are not persuasive.

In to the argument that the examiner previous admitted that AAPA in view of Teng does not teach or suggest by determining the difference of the auto-correlation and the cross-correlation, however after further examination of the Teng reference and consultation with a Primary Examiner, it is determined that this limitation is indeed taught in the Teng reference, therefore, AAPA in view of Teng does satisfy the limitation of the claim.

I regards to the arguments presented that the references do not teach adjusting the filter tap length for an adaptive equalizer based on **positions of the farthest pre-/post ghosts** by using the detected multipath information and a field sync signal. This limitation is disclosed in the Applicant Admitted Prior Art (AAPA) which discloses the received data frame to include a training sequence contained in the field sync signal transmitted from the transmitter (Fig. 1A-B & Specification, Page 2, lines 5-13). The AAPA further discloses an adaptive equalizer used in the receiver for compensation of a channel distortion, such as tilt and ghost wherein the equalizer comprises a filter comprising a number of taps determined by the maximum range of ghosts to be canceled (Specification, Page 2, lines 14-22) wherein one of ordinary skill in the art would recognize that the farthest pre-/post ghosts represent the maximum range of ghosts (multipath signals) and not an arbitrary range. Furthermore, the applicants own "Remarks" (Page 7, lines 18-19) disclose the range

to be a distance from the first ghost to the last ghost and again one of ordinary skill in the art would recognize this as being the farthest pre-/post ghosts.

In regards to the arguments presented that the references do not teach detecting multipath (ghosts) information from a **difference between** the correlation values of the input data and a training sequence (cross correlation), and from an auto correlation value of a training sequence. This limitation is disclosed in the Teng reference (5,285,280), which discloses a system, and process for canceling ghosts (**pre-/post ghosts**) in a sampled, received video signal (Abstract, lines 1-2 & Fig. 1a-d). The received ghost canceling reference (GCR) signal and an ideal ghost canceling (GCR) reference signal are inputted into a signal processor and **compared** so as to determine the equalizer coefficient (Column 1, lines 50-68 & Column 2, lines 1-68 & Fig. 2a-c). Teng also discloses that the processor computes the auto-correlation of the ideal GCR and the cross-correlation of the ideal and received GCR so as to compute the equalizer transversal filter coefficients (Abstract, lines 5-14 & Column 4, lines 25-65). Teng further discloses determining ghost tap coefficient signal, that is implemented by the transversal filter (equalizer), by **comparing** the above-mentioned computed auto-correlation and cross-correlation signals (Column 4, lines 25-68 & Column 6, lines 51-68 & Column 7, lines 1-57 & Eq.'s 7-8 & Fig. 11 & Claim 2). Teng also discloses computing the filter coefficients by comparing (dividing) the auto and cross correlation for nearby ghosts (Column 4, Eq. 6) and by **comparing (computing difference)** between the auto and cross correlation (Column 4, Eq.'s 7-8). Teng in the previous specified equations does

compute the difference and the division is performed so as to normalize the coefficients which represents the filter coefficients to equalize the detected multipath (ghosts) signals. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that AAPA in view of Teng indeed discloses all limitations of the claims and further provide the motivations to combine the references.

The Dieterich reference was used in the previous rejection to explicitly disclose a method and apparatus for removing multipath distortion from the video signals wherein the comparing is performed by computing a difference between two signals (Abstract, lines 1-5 & Column 1, lines 5-20) however, this limitation was already disclosed in the Teng reference as disclosed in the above rejection. Dieterich also discloses methods employed for deghosting employ techniques at the receiver for comparing the received test signal and the ideal version of the test signal in order to configure a filter to remove multipath components from the received signal (Column 1, lines 14-18). Dieterich further discloses computing the difference between the received signal and the ideal version of the received signal stored in the receiver so as to compute the coefficients of the deghosting filter (Column 5, lines 35-68 & Column 6, lines 1-15 & Column 9, lines 55-68 & Fig. 1, elements 30-44 & Fig. 4, element 112).

In regards to the argument that the Whitaker reference does not teach a 704-symbol reference, there is no criticality in the training sequence to be 704 symbols or 700 symbols, this is a matter of design choice and depends on the complexity and

Art Unit: 2634

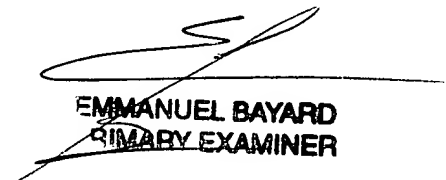
accuracy desired in a particular application and the standard wherein the apparatus is implemented, which defined the number of symbols in the training sequence.

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (571)-272-3038. The examiner can normally be reached on M-F: 9am-6pm.

- If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571)-272-3042
- The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.
- Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sudhanshu C. Pathak


EMMANUEL BAYARD
PRIMARY EXAMINER